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CLAIMS

What is claimed is:

1. An implantable prosthesis for treating osteochondral pathologies, comprising:
  - a porous substrate; and
  - a substance positioned within said porous substrate that is elutable with regard to said porous substrate.
2. The implantable prosthesis of claim 1, wherein said porous substrate defines a cavity in which said substance is positioned.
3. The implantable prosthesis of claim 2, wherein said substance includes at least one member selected from the group consisting of avocado, soya and growth hormone.
4. The implantable prosthesis of claim 2, wherein said substance is formed into a pellet.
5. The implantable prosthesis of claim 4, wherein said pellet includes a shape memory material that is capable of changing an exterior shape of said pellet after the implantable prosthesis is implanted so as to change an exterior shape of said implantable prosthesis.
6. The implantable prosthesis of claim 2, further comprising a cap coupled to said porous substrate so as to enclose said substance within said cavity.
7. The implantable prosthesis of claim 6, wherein said cap includes at least one member selected from the group consisting of biocompatible gel, Type II collagen and live chondrocytes.

8. The implantable prosthesis of claim 1, wherein said porous substrate is a substantially cylindrically symmetrical osteochondral plug.

9. A surgical instrument, comprising:

a trocar having a proximal end and a distal end;

a drill locatable within said trocar to prepare a subchondral bleeding bed for insertion of an implantable prosthesis, said drill having i) a flexible shaft that is extendable beyond said proximal end of said trocar and ii) a rigid tip that is simultaneously extendable beyond said distal end of said trocar, said rigid tip adapted to cut a recess into said subchondral bleeding bed for insertion of an implantable prosthesis; and

an advancement mechanism adapted to apply pressure to said implantable prosthesis.

10. The surgical instrument of claim 9, wherein said advancement mechanism includes a stem that is extendable beyond said proximal end of said trocar and a movable piston coupled to said stem, said movable piston capable of exerting pressure on said implantable prosthesis.

11. The surgical instrument of claim 10, wherein said drill and said advancement mechanism are exchangeable with regard to said trocar, and said movable piston is adapted to press-fit said implantable prosthesis into said recess.

12. The surgical instrument of claim 10, further comprising an implantable prosthesis magazine coupled to said drill, said advancement mechanism i) located within said implantable prosthesis magazine and ii) adapted to move said implantable prosthesis to a loading position where said implantable prosthesis can be transferred to an press-fitting position that is substantially coaxial with said drill.

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13. The surgical instrument of claim 12, further comprising a pivoting carrier coupled to both said drill and said advancement mechanism, said pivoting carrier adapted to transfer said implantable prosthesis from said loading position to said press-fitting position.
14. The surgical instrument of claim 12, wherein a shield is located between said drill and said implantable prosthesis when said implantable prosthesis is in said press-fitting position.
15. The surgical instrument of claim 10, further comprising a heat source coupled to said advancement mechanism.
16. The surgical instrument of claim 15, further comprising a thermocouple coupled to said heat source.
17. A method for treating osteochondral pathologies, comprising:  
     positioning a distal end of a surgical instrument at a site targeted for subchondral implantation of an implantable prosthesis that carries an elutable substance;  
     cutting a recess into a subchondral bleeding bed for insertion of said implantable prosthesis; and  
     press-fitting said implantable prosthesis into said recess at said site and permitting said elutable substance to interact with said subchondral bleeding bed.
18. The method of claim 17, further comprising heat treating said site after the step of press-fitting to smooth a resulting topology.
19. A kit for treating osteochondral pathologies, comprising:  
     an implantable prosthesis including  
         a porous substrate; and

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a substance positioned within said porous substrate that is elutable with regard to said porous substrate.

20. The kit of claim 19, further comprising:

a surgical instrument including

a trocar having a proximal end and a distal end;

a drill locatable within said trocar to prepare a subchondral bleeding bed for insertion of an implantable prosthesis, said drill having i) a flexible shaft that is extendable beyond said proximal end of said trocar and ii) a rigid tip that is simultaneously extendable beyond said distal end of said trocar, said rigid tip adapted to cut a recess into said subchondral bleeding bed for insertion of an implantable prosthesis, and

an advancement mechanism adapted to apply pressure to said implantable prosthesis.

21. The kit of claim 19, further comprising instructions.

22. A method of making an implantable prosthesis for treating osteochondral pathologies, comprising:

forming a cavity in a porous substrate; and

introducing a substance, which is elutable with regard to said porous substrate, into said cavity.

23. The method of claim 22, further comprising:

coupling a cap to said porous substrate to enclose said substance within said cavity.

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